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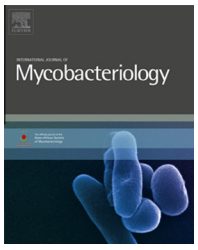

Comparison of PPD test in household contacts of smear-positive and -negative tuberculosis (TB)

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ABSTRACT

Introduction: Pulmonary tuberculosis (TB) is an old disease that has been consistently considered as an important cause of inability and mortality. TB is a major human killer that is progressing as before. Pediatric TB causes 5% to 15% of clinical TB. This study investigated the relative prevalence of infection in the 15- to 25-year-old family members or relatives who were in constant, domestic contact with smear-positive and -negative pulmonary TB patients.

Methods: This is a descriptive, cross-sectional study conducted on individuals having household contact with negative and positive pulmonary tubercular patients during 2011. After identifying positive and negative smear TB in the Tuberculosis Center of Birjand, all 15- to 25-year-old household contacts were identified. After a physical exam, and in order to rule out, a PPD test was conducted with 0.1 cc of the 5 unit PPD solution. The test result was measured and recorded between 48 and 72 h later by a scaled ruler. Induration >5 mm was considered a positive tuberculin test. None of the case contacts has had a BCG vaccination in the last 7 years. In all, CXR was normal. The results were analyzed with the Fisher test.

Results: Of 126 case contact with 75 smear-positive and -negative TB, 102 cases had contact with smear-positive TB and 24 cases had contact with smear-negative TB. Of 102 cases that had contact with smear-positive TB, 17 cases have positive PPD (PPD > 5 mm), and 85 cases have negative PPD. All of the household contacts with negative smear TB have negative PPD; 60% of PPD positive subjects were male and 40%were female. Individuals with positive PPD included 15 children and 2 relatives of a TB patient. The average size of PPD was 7.2 ± 1.4 mm. All contacts with positive PPD had normal CXR. Thus, 13.5% of all case contacts and 16.7% of contacts with smear-positive TB were infected with MTB. There was statistically significant differences between the two groups ($P = 0.04$), but there was no significant difference between the sexes.

Conclusions: The most important way to prevent TB is omission of the disease transmission sources (TB patients) by anti-TB treatment. Extensive studies are needed to ensure that contacts of patients with pulmonary TB are identified and appropriately screened.

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